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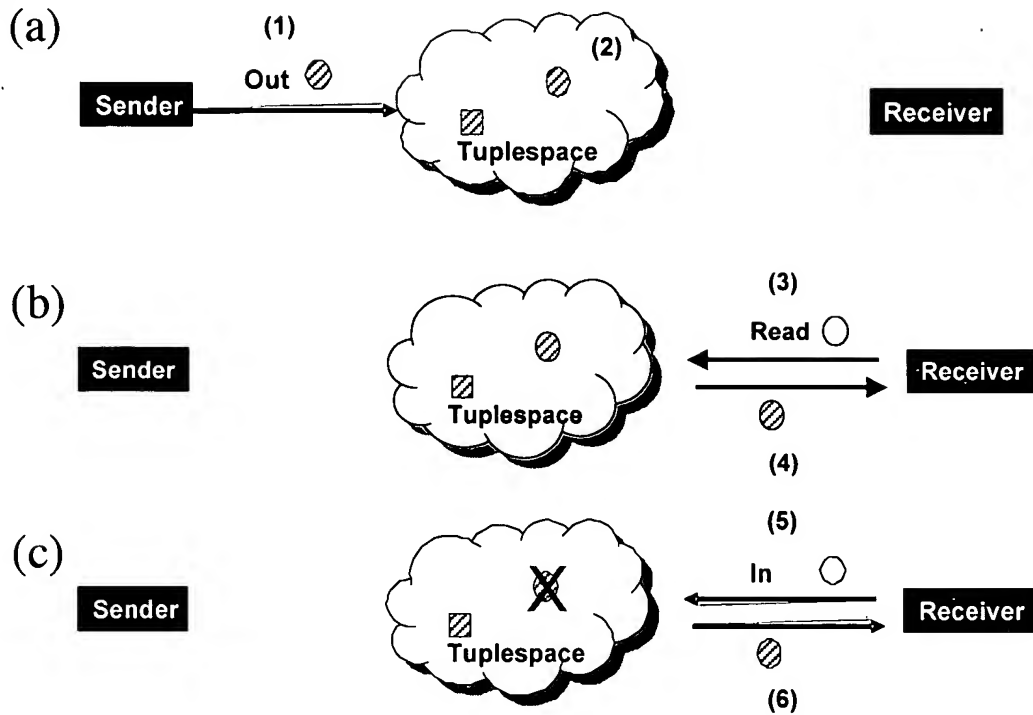


FIG. 1 (PRIOR ART)

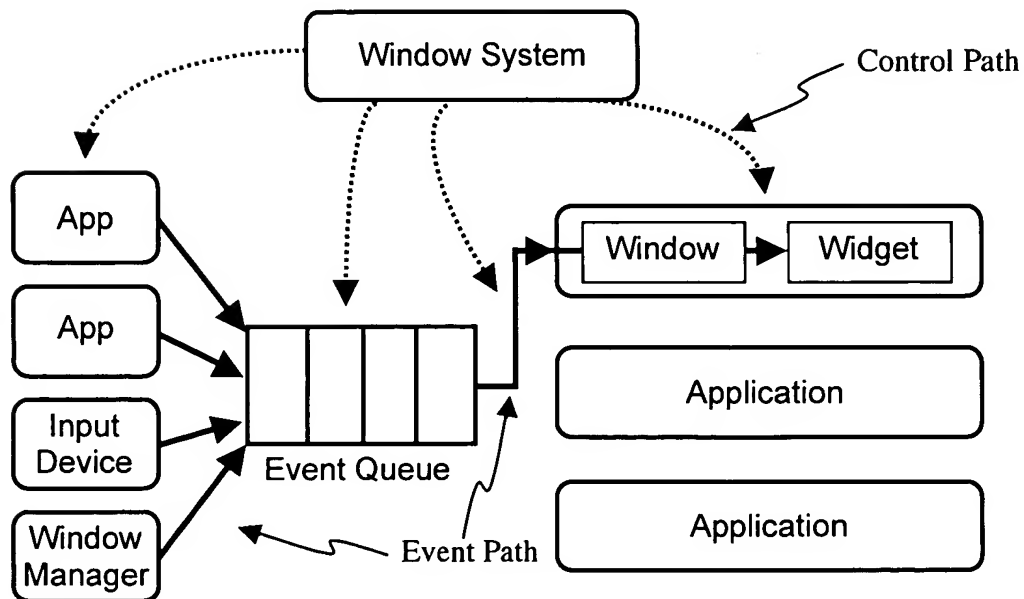


FIG. 2 (PRIOR ART)



FIG. 4

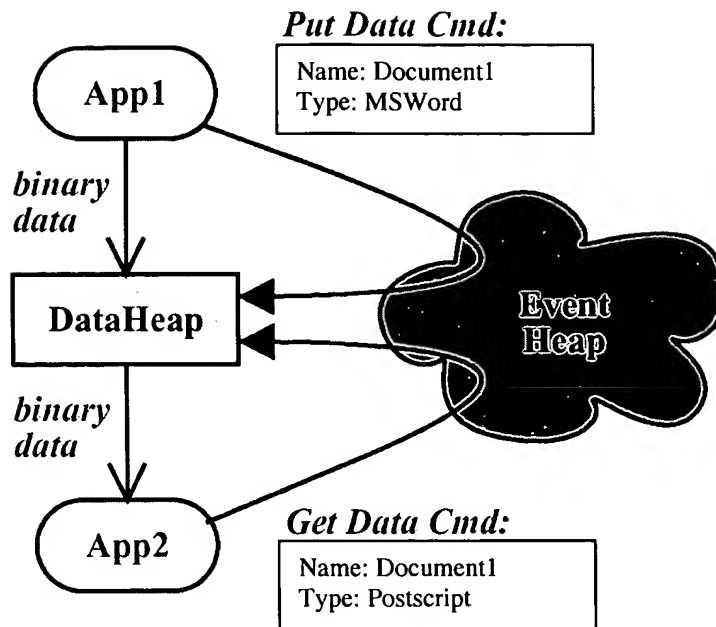


FIG. 5

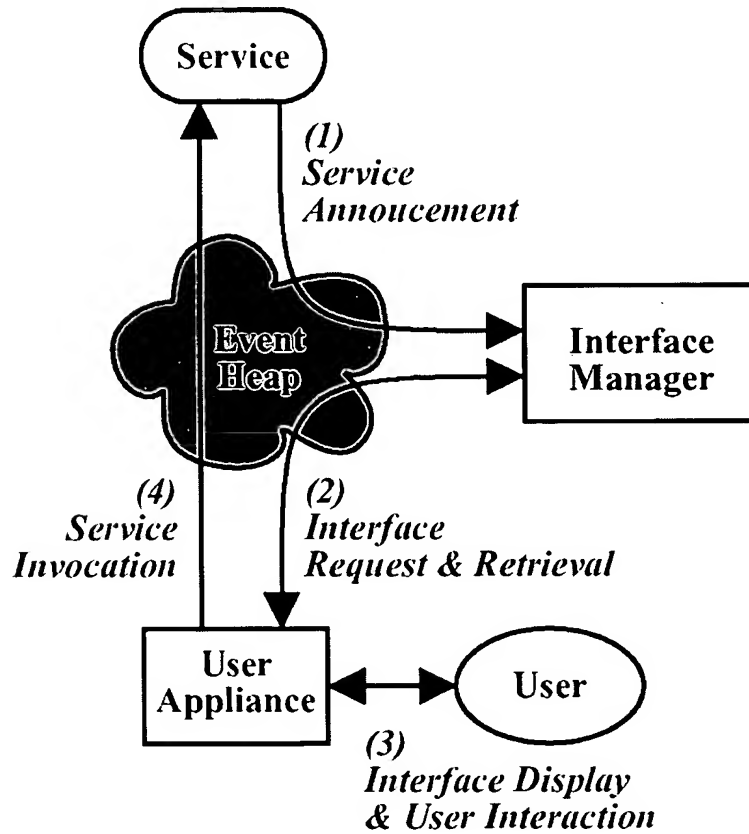


FIG. 6A



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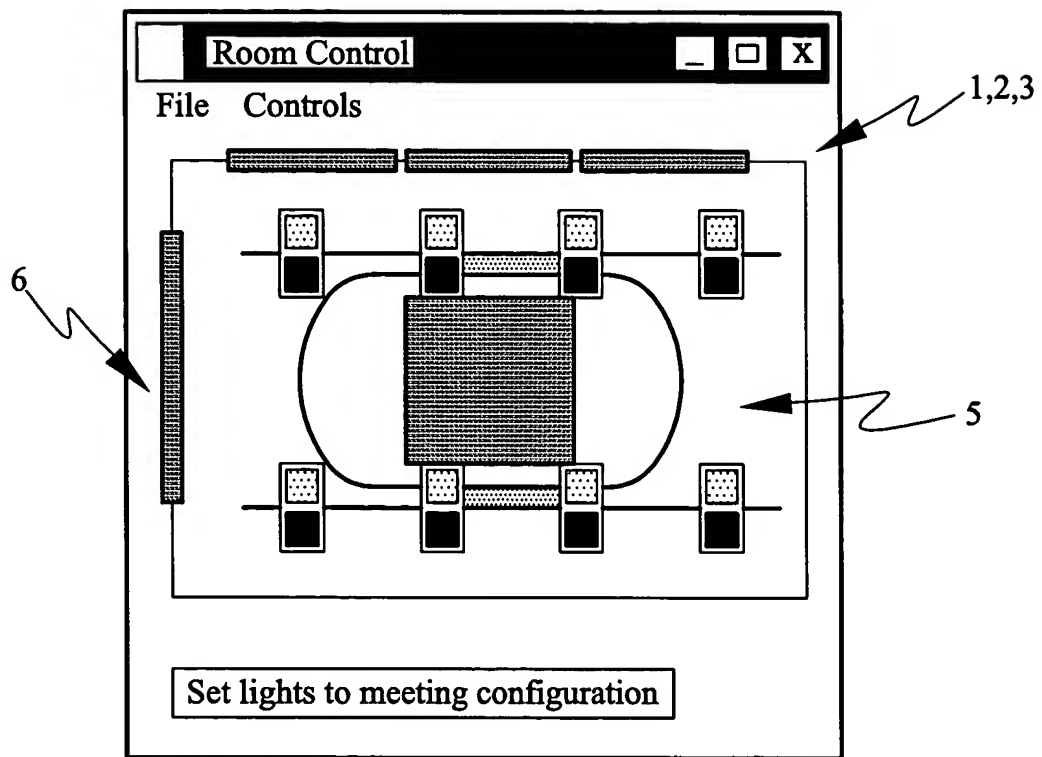


FIG. 6B



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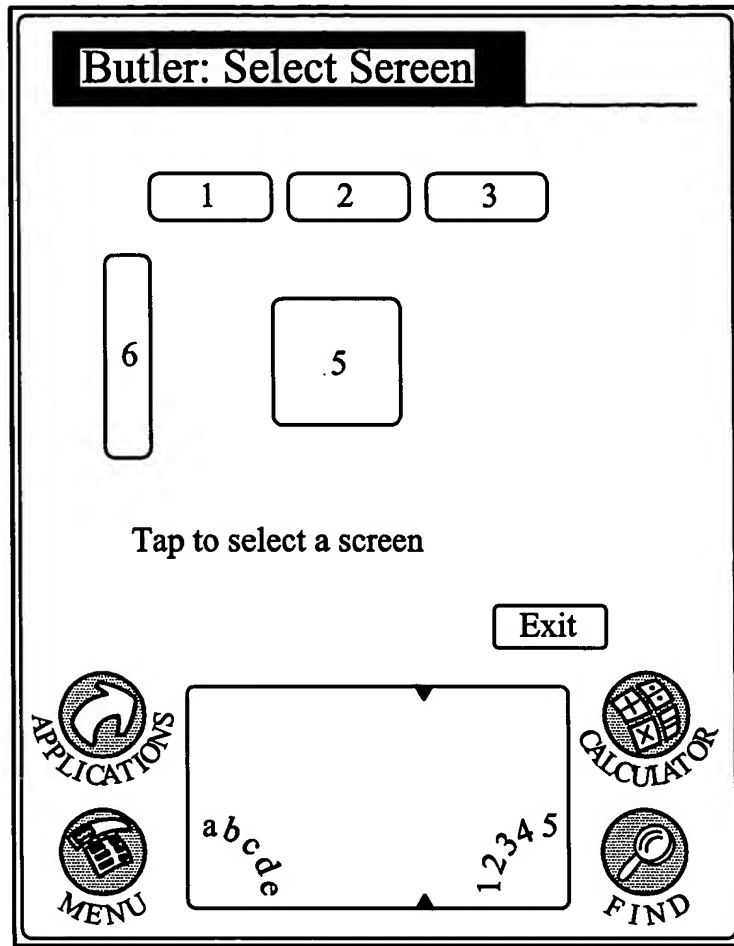


FIG. 6C

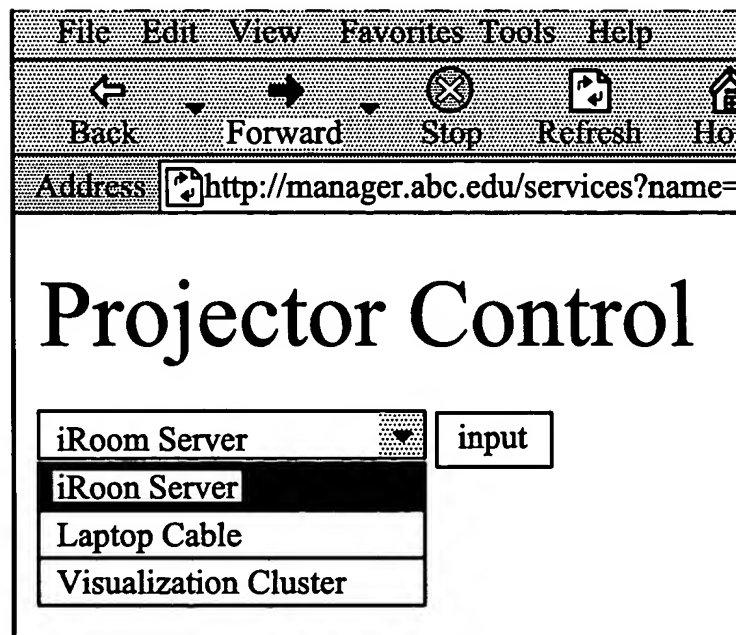


FIG. 6D

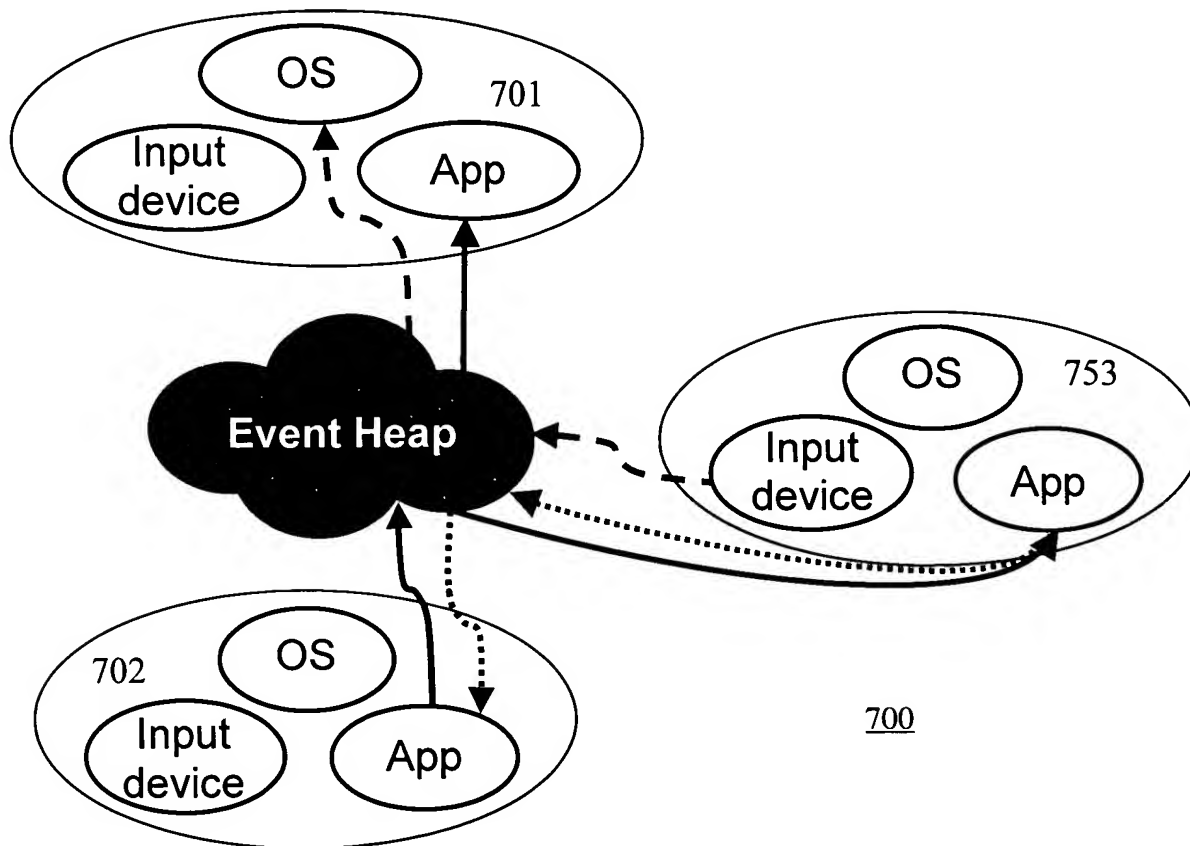


FIG. 7



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SELF-DESCRIPTION ONLY

Double xPos	=	Double xPos
Double yPos		Double yPos

FLEXIBLE TYPING AND SELF-DESCRIPTION

EventType MapLoc	≠	EventType GridCoord
Double xPos		Double xPos
Double yPos		Double yPos

(a) Example of False Match Under Basic Tuplespaces that is Fixed by Typing

Double xPos	≠	Double xPos	EventType MapLoc	EventType MapLoc
Double yPos		Double yPos	Double xPos	Double xPos
		Int zoomFactor	Double yPos	Double yPos
				Int zoomFactor

(b) Example of Flexible Typing Allowing Additional Field Data to be Inserted

Double xPos	≠	Double yPos	EventType CameraPos	EventType CameraPos
Double yPos		Double zPos	Double xPos	Double yPos
Double zPos		Double xPos	Double yPos	Double zPos
			Double zPos	Double xPos

(c) Example of Field Ordering Causing Mismatch which is Fixed by Flexible Typing

FIG. 8



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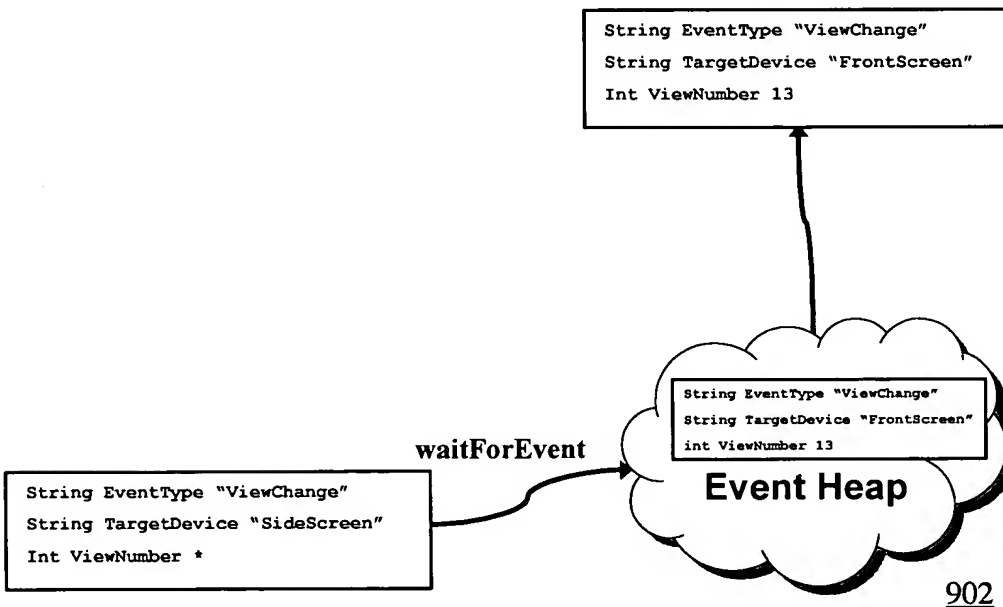
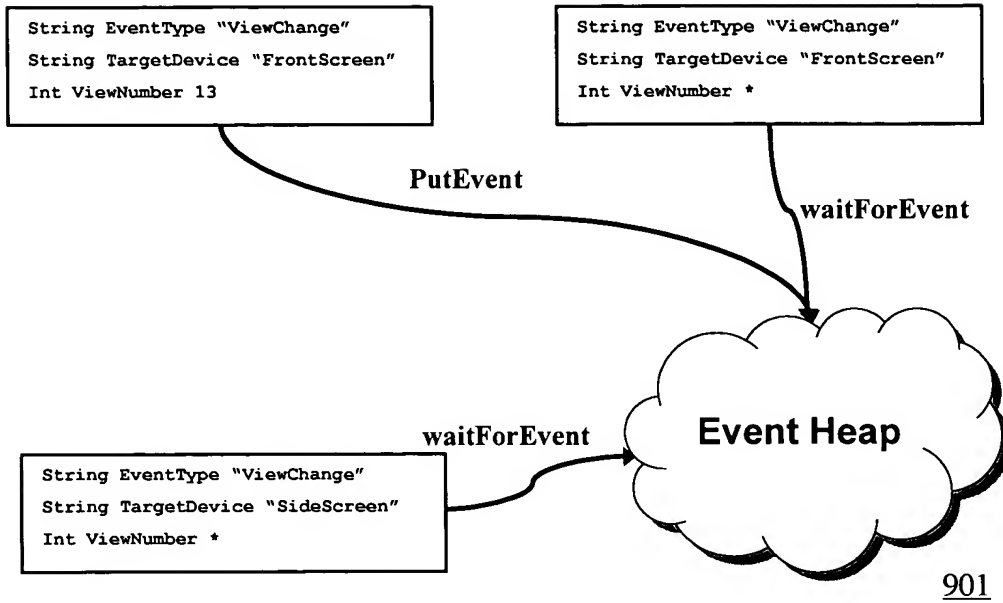


FIG. 9A



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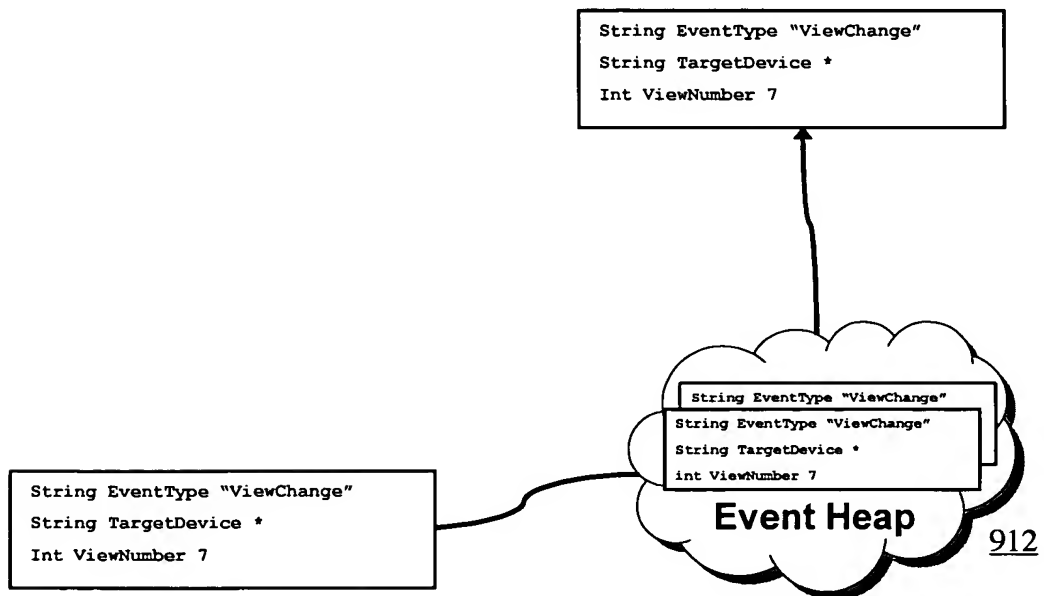
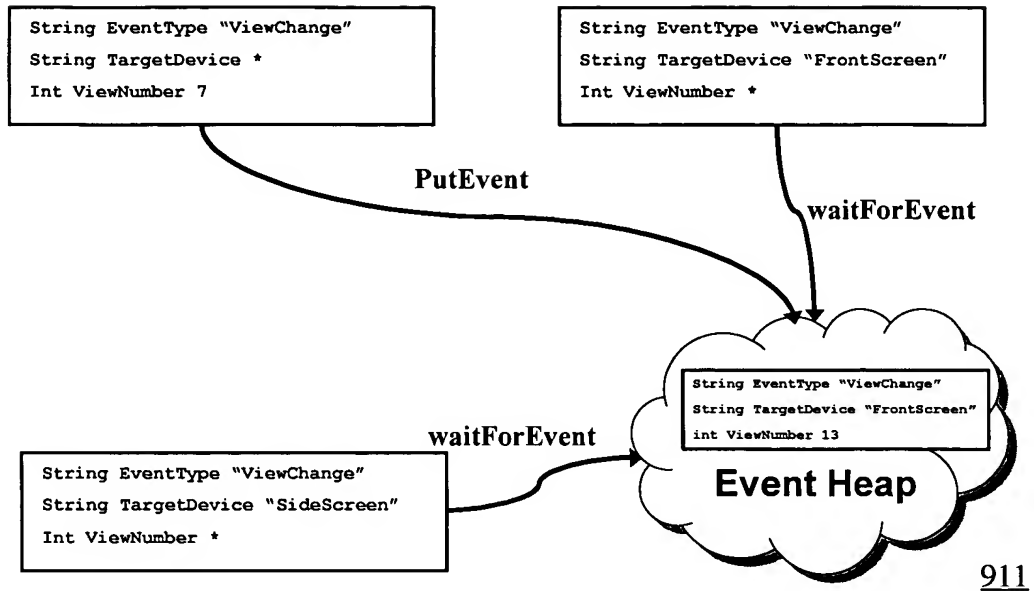


FIG. 9B

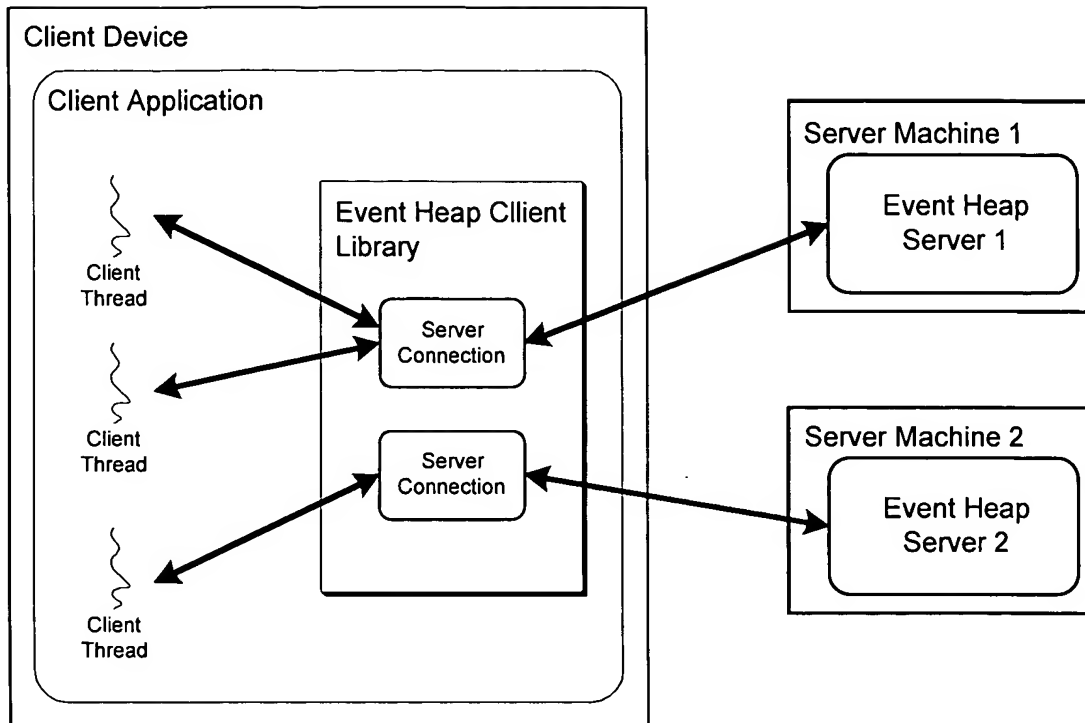


FIG. 10A

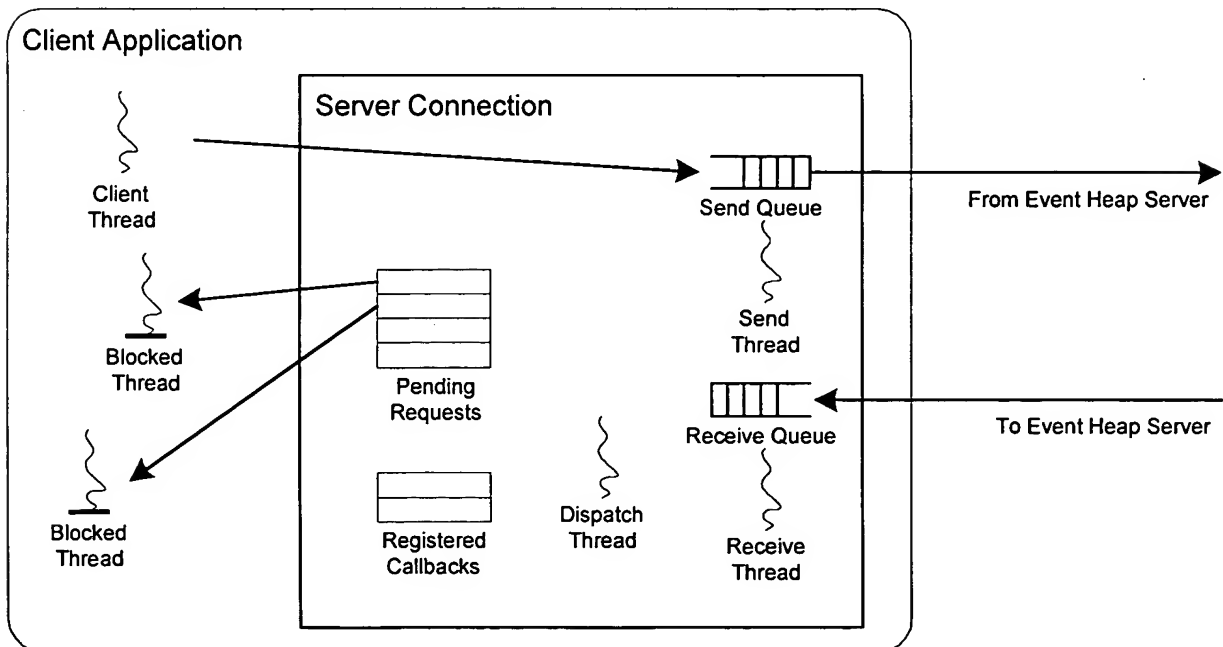
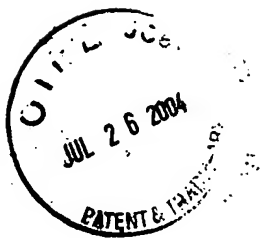


FIG. 10B



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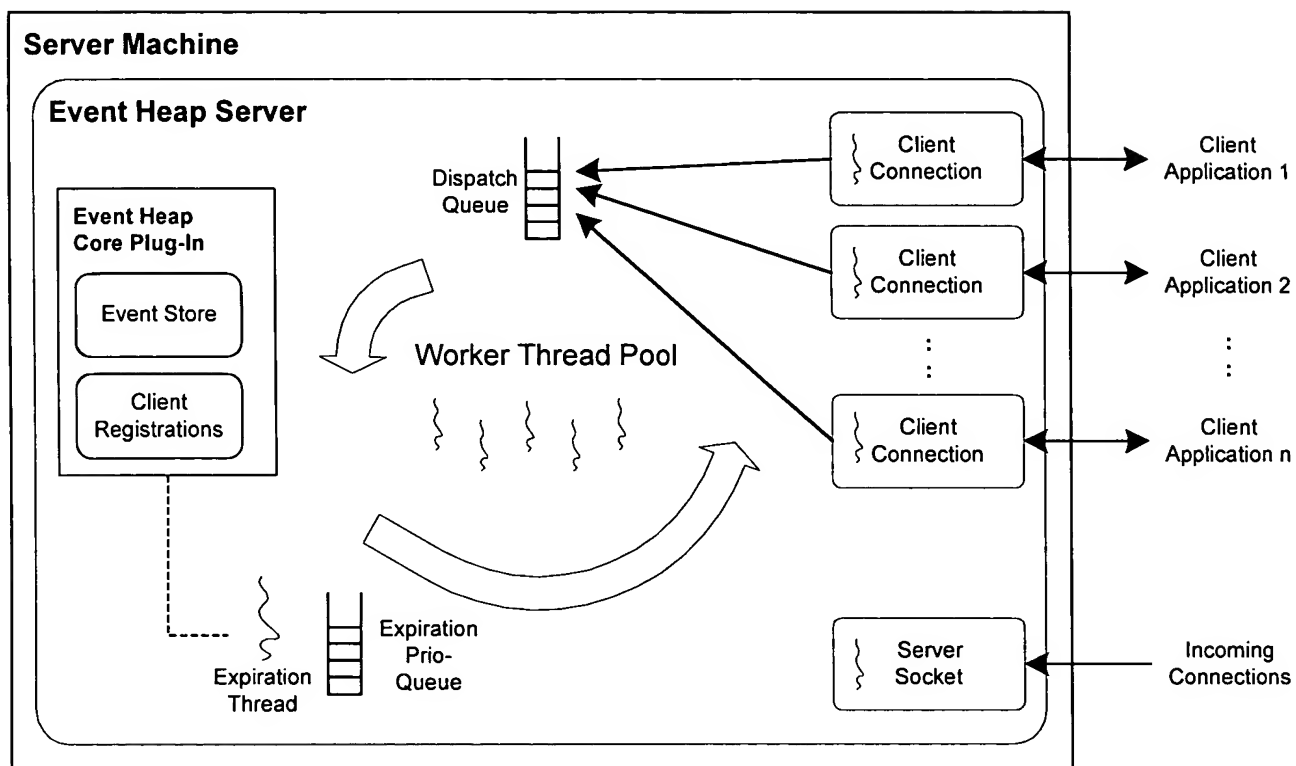


FIG. 11

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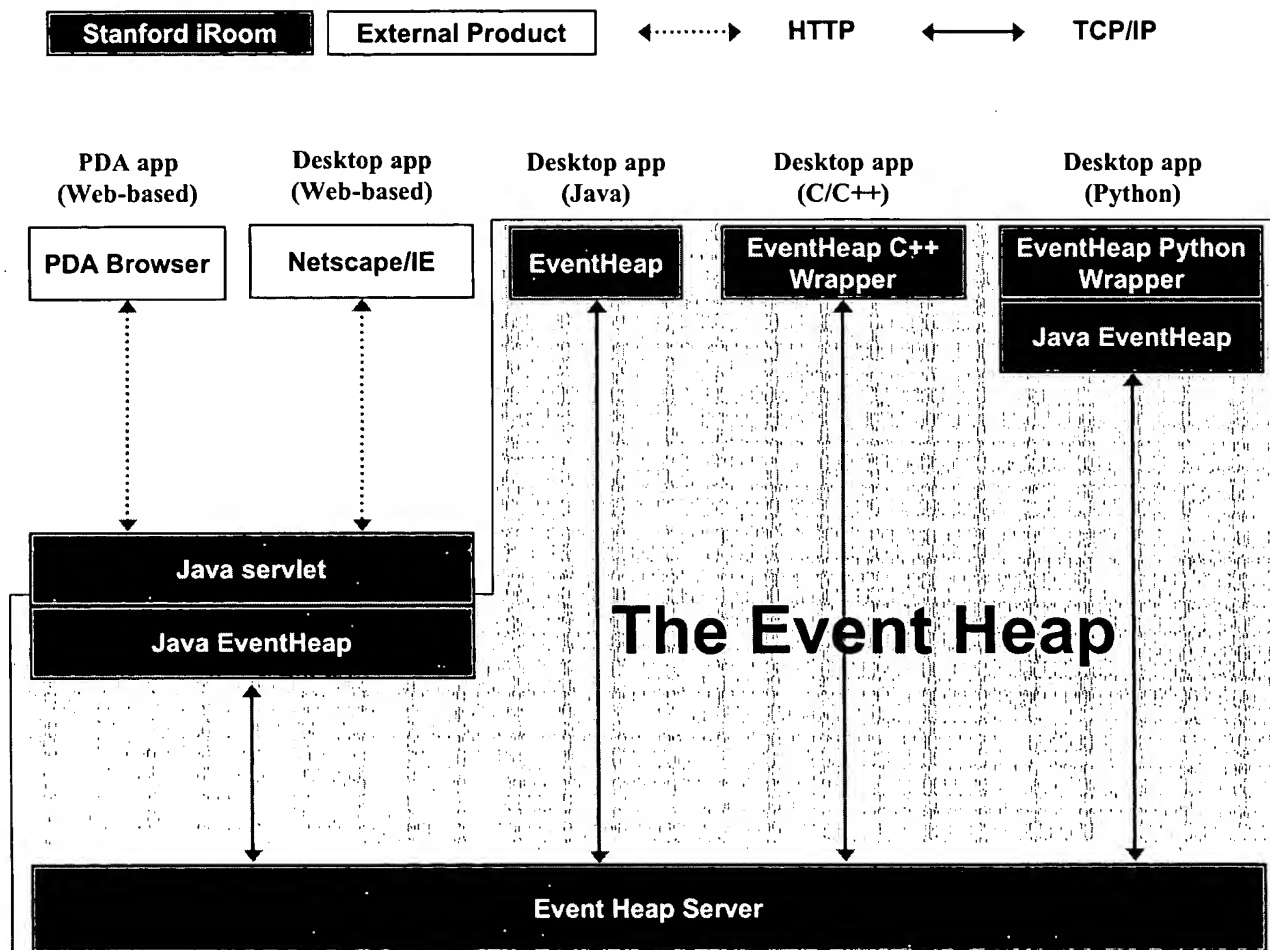
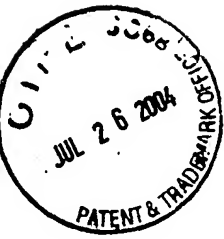


FIG. 12



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Event Heap Debugger

Machine: localhost Port: 1 Source Name: lper_895645535 Application Name: EventHeapDebug Device Name: fragment Disconnect

Value: Set Person Set Group Name Person: Group:

Event:

Event Name	Type	Post Value	Template Value
TestEvent			
120000			
2			
1222127217			
5			

Result of getAI call (18 events):

Event Name	Type	Source	Name	Value
putEvent	Event Type: '17'	Source: 8008_1849474018	(Name: NumAccesses	Typ
getEvent	Event Type: '17'	Source: 7007_1924388574	(Name: NumAccesses	Typ
removeE...	Event Type: '17'	Source: 6006_1537084659	(Name: NumAccesses	Typ
waitToRe...	Event Type: '17'	Source: 5005_2046381882	(Name: NumAccesses	Typ
waitFoE...	Event Type: '17'	Source: 4004_1146667086	(Name: NumAccesses	Typ
snoopEv...	Event Type: '17'	Source: 3003_2130442438	(Name: NumAccesses	Typ
deleteEv...	Event Type: '17'	Source: 2002_1547458209	(Name: NumAccesses	Typ
getAI	Event Type: '17'	Source: 1001_2104118714	(Name: NumAccesses	Typ
clear	Event Type: 'TestEvent'	Source: 1_1855372746	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 1_1855372746	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 0_1044436916	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 0_1044436916	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 1_1855372746	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 0_1044436916	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 0_1044436916	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 1_1855372746	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 0_1044436916	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 1_1855372746	(Name: SendTime	Typ
	Event Type: 'TestEvent'	Source: 0_1044436916	(Name: SendTime	Typ

Field Name: Type: Add Field

Machine: localhost Port: 1 Source Name: Default Application Name: EventHeapDebugger Device Name: Default

Connection: Connected to localhost:4535
getAI: Event(s) retrieved from Event Heap
getAI: call returned no events
getAI: Event(s) retrieved from Event Heap

FIG. 13

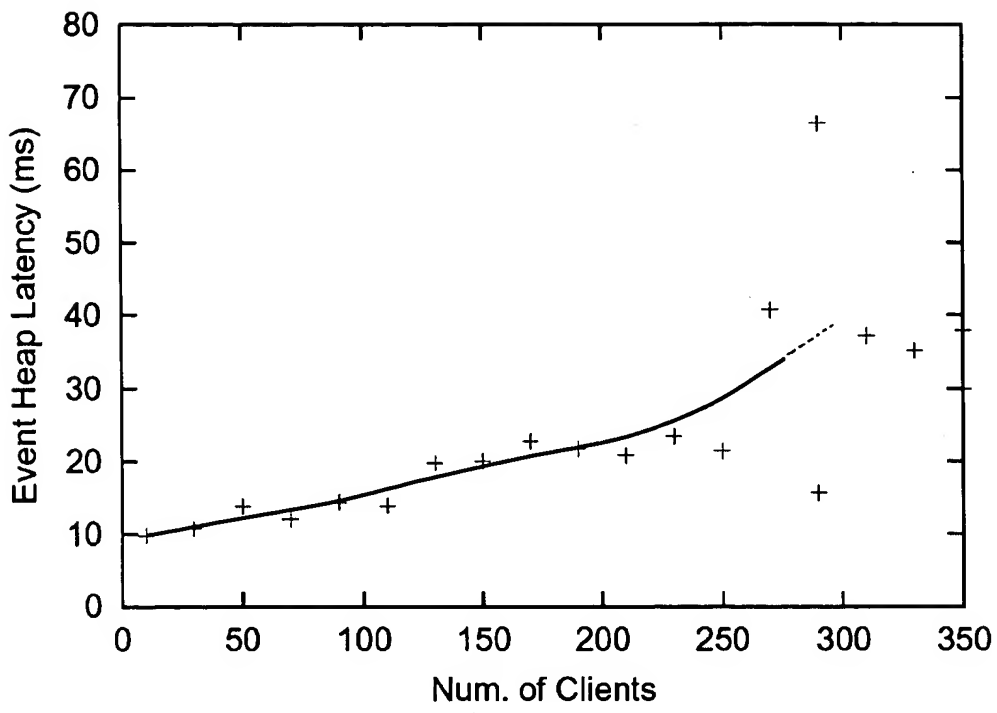


FIG. 15

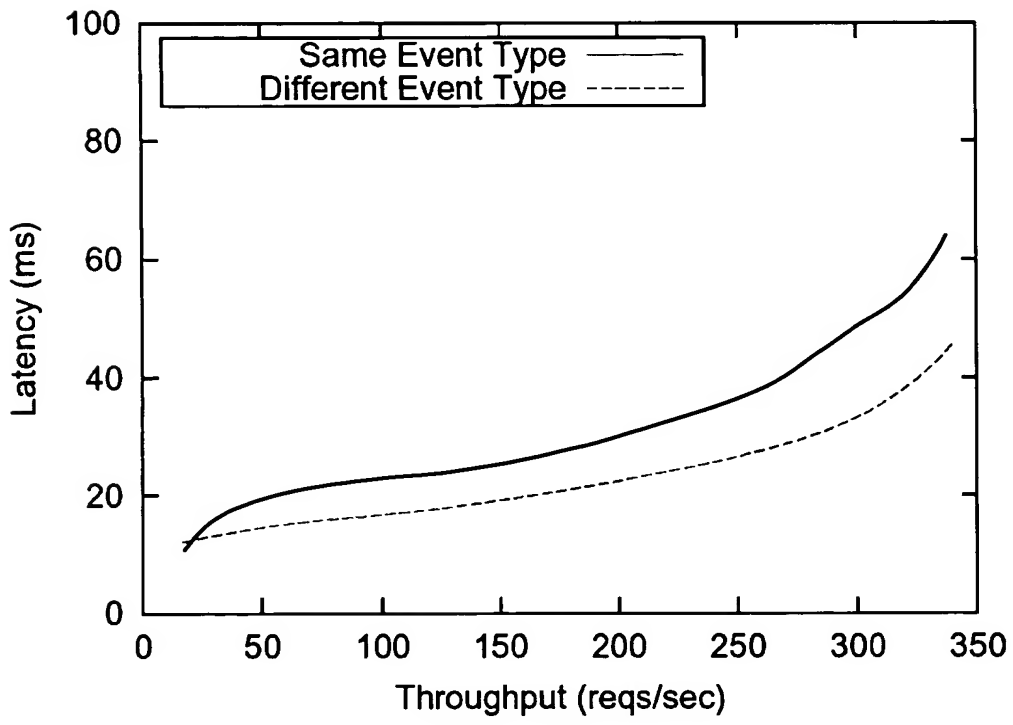


FIG. 15

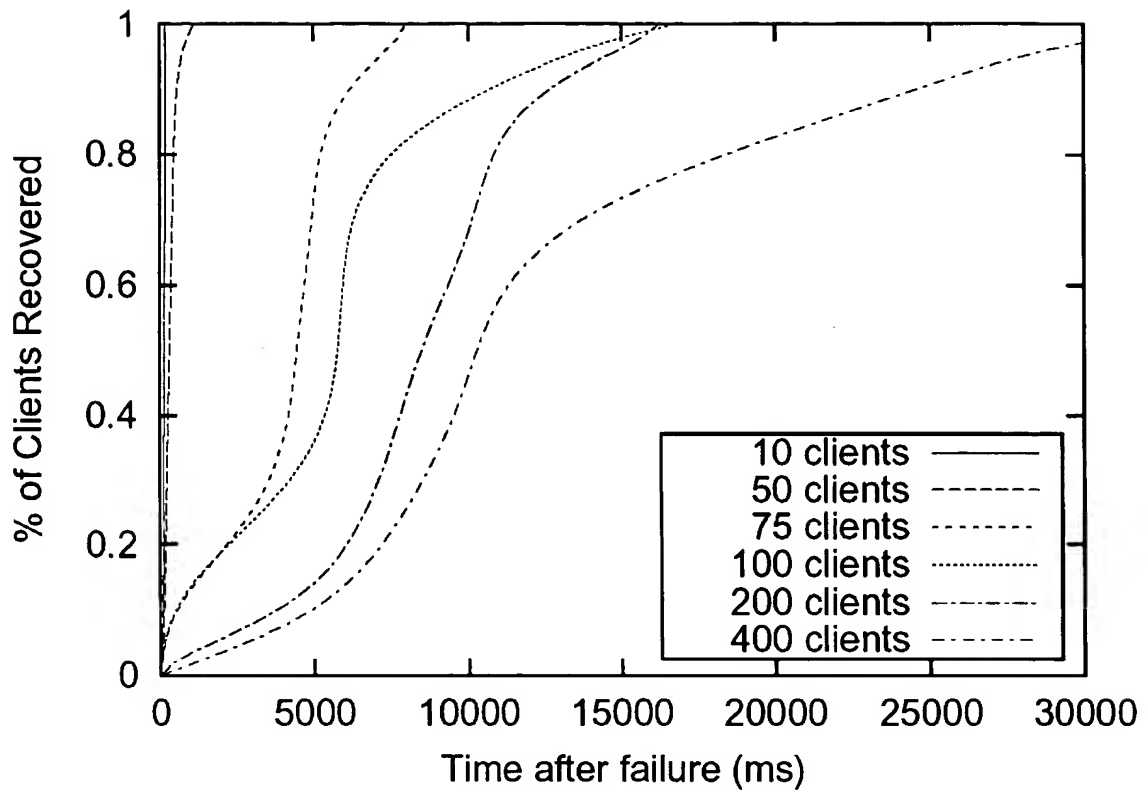


FIG. 16